



Monday, July 15, 2019

Attn: Mr. Keith Gammell
Barnhardt Mfg. Co.
247 Main Rd
P.O. Box 3
Colrain, MA 01340

Project ID: QUARTERLY SLUDGE & SULFIDE
SDG ID: GCD53802
Sample ID#s: CD53802 - CD53803

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Phyllis Shiller".

Phyllis Shiller

Laboratory Director

NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #M-CT007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B

NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
UT Lab Registration #CT00007
VT Lab Registration #VT11301



Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Sample Id Cross Reference

July 15, 2019

SDG I.D.: GCD53802

Project ID: QUARTERLY SLUDGE & SULFIDE

Client Id	Lab Id	Matrix
BELT PRESS GRAB	CD53802	SLUDGE
EFFLUENT	CD53803	WASTE WATER



Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

July 15, 2019

FOR: Attn: Mr. Keith Gammell
Barnhardt Mfg. Co.
247 Main Rd
P.O. Box 3
Colrain, MA 01340

Sample Information

Matrix: SLUDGE
Location Code: BARNHARD
Rush Request: Standard
P.O.#: G10513

Custody Information

Collected by:
Received by: SW
Analyzed by: see "By" below

Date

07/10/19
07/10/19

Time

6:30
16:52

Laboratory Data

SDG ID: GCD53802
Phoenix ID: CD53802

Project ID: QUARTERLY SLUDGE & SULFIDE
Client ID: BELT PRESS GRAB

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Boron	68.2	3.3	mg/Kg	1	07/11/19	EK	SW6010D
Cadmium	< 0.83	0.83	mg/Kg	1	07/11/19	EK	SW6010D
Chromium	7.17	0.83	mg/Kg	1	07/11/19	EK	SW6010D
Copper	13.9	0.83	mg/Kg	1	07/11/19	EK	SW6010D
Mercury	< 0.54	0.54	mg/kg	5	07/12/19	RS	SW7471B
Potassium	3800	1.7	mg/Kg	1	07/11/19	EK	SW6010D
Molybdenum	2.75	0.83	mg/Kg	1	07/11/19	EK	SW6010D
Nickel	3.16	0.83	mg/Kg	1	07/11/19	EK	SW6010D
Lead	< 0.83	0.83	mg/Kg	1	07/11/19	EK	SW6010D
Zinc	24.2	0.83	mg/Kg	1	07/11/19	EK	SW6010D
Percent Solid	12.0	1	%		07/10/19		SW846-%Solid
Total Solids @ 104C	12.0	0.1	%	1	07/10/19	AP/BJA	SM2540B-11
Ammonia as Nitrogen	4340	424	mg/Kg	1	07/12/19	KDB	E350.1
Nitrite as N	< 0.83	0.83	mg/kg	10	07/10/19	BS/GD	SW9056A
Nitrate as N	< 4.17	4.17	mg/kg	10	07/10/19	BS/GD	SW9056A
pH - Sludge	7.98	1.00	pH Units	1	07/10/19 21:36	AP	SW9045
Nitrogen Tot Kjeldahl	71300	848	mg/Kg	1	07/12/19	KDB	E351.1
Total Nitrogen	71300	0.05	mg/Kg	1	07/12/19	KDB	SM4500NH3/E300.0-97
Phosphorus, Total	5800	100	mg/Kg	25	07/11/19	JR	SM4500PE-11
Mercury Digestion	Completed				07/12/19	LS/LS	SW7471B
Sludge Ext. for PCB	Completed				07/11/19	P/E/T	SW3550C
Total Metals Digest	Completed				07/10/19	M/AG/BF	SW3050B

Polychlorinated Biphenyls

PCB-1016	ND	400	ug/Kg	1	07/12/19	SC	SW8082A
PCB-1221	ND	400	ug/Kg	1	07/12/19	SC	SW8082A
PCB-1232	ND	400	ug/Kg	1	07/12/19	SC	SW8082A
PCB-1242	ND	400	ug/Kg	1	07/12/19	SC	SW8082A

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
PCB-1248	ND	400	ug/Kg	1	07/12/19	SC	SW8082A
PCB-1254	ND	400	ug/Kg	1	07/12/19	SC	SW8082A
PCB-1260	ND	400	ug/Kg	1	07/12/19	SC	SW8082A
PCB-1262	ND	400	ug/Kg	1	07/12/19	SC	SW8082A
PCB-1268	ND	400	ug/Kg	1	07/12/19	SC	SW8082A
<u>QA/QC Surrogates</u>							
% DCBP	75		%	1	07/12/19	SC	30 - 150 %
% DCBP (Confirmation)	66		%	1	07/12/19	SC	30 - 150 %
% TCMX	65		%	1	07/12/19	SC	30 - 150 %
% TCMX (Confirmation)	54		%	1	07/12/19	SC	30 - 150 %

Massachusetts does not offer certification for Soil/Solid matrices.

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

QA/QC Surrogates: Surrogates are compounds (preceded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.



Phyllis Shiller, Laboratory Director

July 15, 2019

Reviewed and Released by: Rashmi Makol, Project Manager



Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

July 15, 2019

FOR: Attn: Mr. Keith Gammell
Barnhardt Mfg. Co.
247 Main Rd
P.O. Box 3
Colrain, MA 01340

Sample Information

Matrix: WASTE WATER
Location Code: BARNHARD
Rush Request: Standard
P.O.#: G10513

Custody Information

Collected by:
Received by: SW
Analyzed by: see "By" below

Date

07/10/19
07/10/19

Time

7:00
16:52

Laboratory Data

SDG ID: GCD53802
Phoenix ID: CD53803

Project ID: QUARTERLY SLUDGE & SULFIDE
Client ID: EFFLUENT

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Sulfide	< 0.05	0.05	mg/L	1	07/12/19	GD	SM4500S-D-11

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director

July 15, 2019

Reviewed and Released by: Rashmi Makol, Project Manager



Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

QA/QC Report

July 15, 2019

QA/QC Data

SDG I.D.: GCD53802

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 487341 (mg/kg), QC Sample No: CD54286 2X (CD53802)													
Mercury - Soil	BRL	0.03	<0.03	<0.03	NC	95.7	94.5	1.3	97.7	101	3.3	75 - 125	20
Comment:													
Additional Mercury criteria: LCS acceptance range for waters is 80-120% and for soils is 75-125%													
QA/QC Batch 487002 (mg/kg), QC Sample No: CD53744 (CD53802)													
<u>ICP Metals - Soil</u>													
Boron	BRL	1.3	2.3	2.3	NC	100	100	0.0	89.3			75 - 125	30
Cadmium	BRL	0.32	0.36	<0.35	NC	93.1	94.0	1.0	89.2			75 - 125	30
Chromium	BRL	0.32	29.2	18.6	44.4	97.0	95.6	1.5	90.6			75 - 125	30 r
Copper	BRL	0.65	20.4	18.3	10.9	97.5	96.6	0.9	93.2			75 - 125	30
Lead	BRL	0.32	23.4	20.5	13.2	95.2	94.7	0.5	95.4			75 - 125	30
Molybdenum	BRL	0.32	<0.35	<0.35	NC	98.5	98.7	0.2	92.9			75 - 125	30
Nickel	BRL	0.32	12.9	13.6	5.30	93.7	93.5	0.2	90.8			75 - 125	30
Potassium	BRL	4.9	1090	1090	0	103	104	1.0	>130			75 - 125	30 m
Zinc	BRL	0.65	45.7	44.3	3.10	93.9	94.7	0.8	90.4			75 - 125	30

m = This parameter is outside laboratory MS/MSD specified recovery limits.

r = This parameter is outside laboratory RPD specified recovery limits.



Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

QA/QC Report

July 15, 2019

QA/QC Data

SDG I.D.: GCD53802

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 487351 (mg/L), QC Sample No: CD52867 (CD53803)													
Sulfide	BRL	0.05	<0.05	<0.05	NC	100			78.6			90 - 110	20
QA/QC Batch 487091 (%), QC Sample No: CD53411 (CD53802)													
Total Solids	BRL	0.1	1.22	1.30	6.30	100						75 - 125	30
Comment:													
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.													
QA/QC Batch 487190 (mg/Kg), QC Sample No: CD54172 (CD53802)													
Phosphorus, Total as P	BRL	0.50	1170	1220	4.20	114			105			75 - 125	30
Comment:													
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.													
QA/QC Batch 487271 (mg/L), QC Sample No: CD53255 (CD53802)													
Nitrate as Nitrogen	BRL	0.05	0.79	0.80	1.30	95.7			104			90 - 110	20
Nitrite as Nitrogen	BRL	0.004	<0.004	<0.004	NC	107			104			90 - 110	20
QA/QC Batch 487239 (mg/Kg), QC Sample No: CD52737 17.5X (CD53802)													
Ammonia as Nitrogen	BRL	3.51	2780	2900	4.20	98.8			97.8			75 - 125	30
Nitrogen Tot Kjeldahl	BRL	3.51	42200	44800	NC	109			98.0			75 - 125	30
Comment:													
TKN is reported as Organic Nitrogen in the Blank, LCS, DUP and MS.													



Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

QA/QC Report

July 15, 2019

QA/QC Data


SDG I.D.: GCD53802

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 487313 (ug/Kg), QC Sample No: CD52533 (CD53802)										
<u>Polychlorinated Biphenyls - Sludge</u>										
PCB-1016	ND	13	73	66	10.1				40 - 140	30
PCB-1221	ND	13							40 - 140	30
PCB-1232	ND	13							40 - 140	30
PCB-1242	ND	13							40 - 140	30
PCB-1248	ND	13							40 - 140	30
PCB-1254	ND	13							40 - 140	30
PCB-1260	ND	13	92	81	12.7				40 - 140	30
PCB-1262	ND	13							40 - 140	30
PCB-1268	ND	13							40 - 140	30
% DCBP (Surrogate Rec)	100	%	88	79	10.8				30 - 150	30
% DCBP (Surrogate Rec) (Confirm)	131	%	120	86	33.0				30 - 150	30 r
% TCMX (Surrogate Rec)	84	%	78	72	8.0				30 - 150	30
% TCMX (Surrogate Rec) (Confirm)	103	%	100	75	28.6				30 - 150	30

r = This parameter is outside laboratory RPD specified recovery limits.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MS - Matrix Spike
MS Dup - Matrix Spike Duplicate
NC - No Criteria
Intf - Interference


Phyllis Shiller, Laboratory Director
July 15, 2019

Monday, July 15, 2019

Criteria: None

State: MA

Sample Criteria Exceedances Report

GCD53802 - BARNHARD

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	Analysis Units
--------	-------	-----------------	----------	--------	----	----------	----------------	-------------------

*** No Data to Display ***

Phoenix Laboratories does not assume responsibility for the data contained in this exceedance report. It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.



Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823



Analysis Comments

July 15, 2019

SDG I.D.: GCD53802

The following analysis comments are made regarding exceptions to criteria not already noted in the Analysis Report or QA/QC Report: None.

